

REMARKS/ARGUMENTS

Descriptive support for new Claim 8 is found in Table 1 (page 27) of Applicants' original Specification. Descriptive support for new Claim 9 is found at page 6, lines 9-12, of Applicant's original Specification. Descriptive support for new Claim 10 is found at page 17, lines 1-5. Descriptive support for new Claim 11 is found at page 11, line 21, to page 12, line 4. Descriptive support for new Claim 12 is found at page 15, lines 1-6.

The Examiner's indication that Claim 6 would be allowed in independent form and acknowledgment of Applicants' claim for priority under 35 U.S.C. §119 are appreciated. Applicants respond to the Examiner's Office action dated May 9, 2008, rejecting Claims 1-5 and 7 for unpatentability under 35 U.S.C. §103, as follows:

The Examiner rejected Claims 1-4 under 35 U.S.C. §103(a) as being unpatentable over Adachi (Adachi et al., US 2002/0113545 A1, dated Aug. 22, 2002) in view of Shiang (Shiang et al., US 2005/0260439 A1, dated Nov. 24, 2005) and Forrest (Forrest et al., US 7,061,011 B2, dated Jun. 13, 2006 (Rejection 1). The Examiner rejected Claims 5 and 7 under 35 U.S.C. 103(a) as being unpatentable over Adachi in view of Forrest and Shiang and further in view of Kondakova (Kondakova et al., US 2005/0123797 A1, dated Jun. 9, 2005)(Rejection 2). In Applicants' view, the Examiner has not satisfied the Office's initial burden to establish a *prima facie* case of obviousness for subject matter Applicants' claims for the following reasons:

The Examiner appears to have misinterpreted the claim language, and as a result, misconstrued the scope and content of the claimed subject matter.

The Examiner appears to have misread or misunderstood certain teachings of the prior art and their pertinence to the claimed subject matter and to have based his conclusions with regard to the patentability of the claimed subject matter under 35 U.S.C. §103 on clearly

erroneous or irrelevant findings with regard to the teachings of one or more of the applied references.

With all due respect, the Examiner appears to have improperly made a case for the unpatentability of the claimed subject matter under 35 U.S.C. §103 for obviousness based on a hindsight selection and combination of the elements of Appellants' claims from the prior art to reconstruct the claimed subject matter.

1. Claim interpretation

Claim 1 is directed to an organic electroluminescent (EL) device having a structure in which “at least an emitting layer and an electron-transporting layer are stacked between an anode and a cathode” (Claim 1; emphasis added). It appears from the May 9, 2008, Office action that the Examiner interpreted the claim language to encompass and include structures in which the at least one emitting layer and electron-transporting layer required in Appellants’ Claim 1 are one and the same layer. On page 2 of the Office action date May 9, 2008 (OA), the Examiner stated (OA, p. 2, last para.):

Adachi discloses, at least in Figure 6, an organic electroluminescent device . . . having a structure in which at least an emitting layer (613) and an electron-transporting layer (613)(Paragraph [0033] lines 5-6 teaches that the electron transport layer also functions as an emitting layer) are stacked between an anode (611) and a cathode (614)(see Figure 6) . . . .

At lines 5-6 of [0033] Adachi discloses, “The organic electron transporting layer 613 also functions as the emission layer.”

With all due respect, the plain language of Claim 1 requires that the emitting layer and the electron-transporting layer “are” two distinct layers. The language of Applicants’ Claim 1 may be found in the supporting Specification at page 5, line 19, to page 6, line 1.

Moreover, Applicants' Figure 1 depicts an EL device having stacked layers 1, 4, 3, and 2 (Fig. 1). The Specification explains (Spec., p. 6, ll. 5-13):

As shown in FIG. 1, the organic EL device according to the invention has a multilayer structure in which a plurality of layers including at least an emitting layer 3 and an electron-transporting layer 4 are formed between a pair of electrodes (cathode 1 and anode 2), wherein an organic medium forming the emitting layer 3 includes an organic metal complex having a heavy metal as a central metal (hereinafter abbreviated as "heavy metal organic complex"), and the emitting layer 3 and the electron-transporting layer 4 are stacked.

In light of the plain language of Claim 1 and the description in the supporting Specification as a whole, Applicants submit that the Examiner erred when apparently concluded that, given the broadest reasonable interpretation the claim language allows in light of the teaching of the supporting Specification (*see In re Zletz*, 893 F.2d 319 (Fed. Cir. 1989)), structures of Appellants' Claim 1 which have a stack of at least an emitting layer and an electron-transporting layer encompass and/or include structures in which the at least one emitting layer and electron-transporting layer required in Appellants' Claim 1 are one and the same layer. Note that the examples of device configuration described in the Specification (pp. 11-12, bridging para.) have the following configurations:

- (1) anode/emitting layer/electron-transporting layer/cathode;
- (2) anode/ . . . /emitting layer/electron-transporting layer/cathode; and
- (3) anode/ . . . / . . . /emitting layer/electron-transporting layer/cathode.

## 2. Findings of fact

Obviousness is a question of law based upon underlying factual findings. Where, as here, the Examiner's factual findings with regard to the prior art teachings are irrelevant or

clearly erroneous, a conclusion of obviousness cannot stand. *Alza Corp. v. Mylan Labs., Inc.*, 464 F.3d 1286, 1289 (Fed. Cir. 2006).

The Office action dated May 9, 2008, contains factual findings which either have little or no support in the cited prior art or do not relate to the subject matter of Applicants' claims. For example, in the Office action at page 2, last para., the Examiner, citing Adachi [0004, lines 9-10], found that Adachi's emitting layer contains an organic metal complex. Adachi there refers to "typical phosphorescent organometallic compounds" (Adachi [0004, lines 9-10]) which need not be organic metal complexes.

The Examiner finds that Adachi fails to disclose the " $0.20 \text{ eV} < \Delta\text{AF} \leq 0.65 \text{ eV}$ " limitation of Applicants' Claim 1 (OA, p. 3, first para.). To satisfy Adachi's deficient disclosure, the Examiner finds the  $\Delta\text{AF}$  limitation of Applicant's claims in Forrest's disclosure (OA, page 3, second para.). However, the teaching of Forrest to which the Examiner directs Applicants' attention appears to relate to one emitting layer which may, "in addition, contain electron transport material" (OA, p. 3, second para.). Again, the Examiner appears to erroneously construe the language of Claim 1 to encompass structures wherein the emitting layer and the electron-transporting layer may be one and the same. The Examiner has not explained how or why a person having ordinary skill in the art would consider Forrest's teachings pertinent to the subject matter Applicants claim.

Given, according to the Examiner's statement (OA, p. 3, second para.), Forrest's alleged teaching of a single emitting layer which may also contain electron-transport material and a preferred range of  $\Delta\text{AF}$  of an emitting material and an electron-transporting material when present in a single emitting layer, Applicants fail to understand the pertinence of the Forrest teachings relied upon by the Examiner to the subject matter Applicants' claim. The Examiner has not explained how a person having ordinary skill in the art would correlate Forrest's teachings to the subject matter Applicants claim.

Moreover, even if Forrest's alleged teaching that the difference between the electron affinity ( $\Delta AF$ ) between the two organic materials in a single emitting layer "should be within 0.4 eV and preferably within about 0.2 eV" (OA, p. 3, para. 2) is pertinent to a structure with distinct emitting and electron-transporting material layers, Forrest's teaching appears to teach away from the  $\Delta AF$  range in Applicants' claims. References should be read for everything they would have taught a person having ordinary skill in the art. *In re Keller*, 642 F.2d 413 (CCPA 1981). The Examiner should consider all the evidence for and against patentability. *In re Lamberti*, 545 F.2d 747 (CCPA 1976).

The Examiner relies on Shiang for its alleged teaching to use a heavy metal in the organic emitting materials for more efficient energy transfer (OA, p. 3, fourth para.). The Examiner has not explained, and Applicants do not comprehend, how and why the Shiang teaching upon which the Examiner relies remedies the deficiencies of Adachi and Forrest. Appellants can speculate, but it is the Office's burden to establish a *prima facie* case for obviousness under 35 U.S.C. §103. *In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992); *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988).

Regarding the Examiner's reliance on certain teaching of Shiang to satisfy the further limitations of Applicants' Claims 2-4 (OA, pp. 3-), the Examiner has not explained how and why a person having ordinary skill in the art would have considered Shiang's alleged teachings with regard to the relative wavelengths of materials in the emitting regions in its structures pertinent to both the single layer structures allegedly described by Adachi and Forrest and the multilayer structures Applicants claim. In short, the Examiner has not adequately explained how and why a person having ordinary skill in the art would apply Shiang's teaching to the structures defined by Adachi and Forrest. How and why the combined teaching of Adachi, Forrest, and Shiang would have led persons having ordinary skill in the art to the device Applicants claim remains a mystery.

Regarding the Examiner's rejections of Claims 5 and 7 under 35 U.S.C. §103 in view of the combined teachings of Adachi, Forrest, and Shiang, further in view of Kondakova, Applicants note that the deficiencies of Adachi, Forrest, and Shiang are not cured by Kondakova and further submit that the Examiner has not satisfied his initial burden to establish a *prima facie* case of obviousness of a claimed invention over prior art teaching merely by alleging that Kondakova teaches a certain one of Applicants' claim limitations and falls within the same field of invention. The Examiner has not explained how a person having ordinary skill in the art would have been led to the subject matter claimed, considered as a whole, especially since it is already unclear how the teachings of Adachi and Forrest upon which the Examiner relies pertain to the subject matter Applicants' claim.

3. Hindsight

A case for obviousness should not be based on hindsight. *See In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988)(“One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.”) and *In re Fritch*, 972 F.2d 1260 (Fed. Cir. 1992)(“impermissible to use the claimed invention as an instruction manual . . . to piece together the teachings of the prior art so that the claimed invention is rendered obvious”). There must be some reason or suggestion for doing so, found either in the references themselves or in the knowledge available to, or the skill in the art of, a person having ordinary skill in the art. Where, as here, the Examiner has picked and chosen and combined teachings from three and more prior art references, some of which do not appear to reasonably relate to the invention Applicants claim, to reconstruct the claimed invention without evidence or an explanation suggesting the claimed subject matter, the rejection of the claimed invention appears to be based on impermissible hindsight.

Here, the Examiner fails to explain how and why a person having ordinary skill in the art reasonably would have combined the teachings of the applied prior art references he relies upon to achieve Applicants' claimed invention. Applicants view the Examiner's position as unreasonable and as reliant on hindsight. Applicants believe the Examiner misconstrued the scope of the claimed invention and that the rationale by which the Examiner combined and correlated the teachings of the separate references is strained and, in any event, targeted at a device structure not included within Applicants' claims.

For the reasons stated hereinabove, Applicants respectfully request the Examiner to enter new Claims 8-12, withdraw the rejection of pending Claims 1-5 and 7 under 35 U.S.C. §103, and pass allowable Claims 1-12 to issue.

Respectfully submitted,

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